

DEPARTMENT OF HEALTH SERVICES

714/744 P STREET
SACRAMENTO, CA 95814

(916) 324-1826



JUN 22 1983

Councilman Herb Tice
City of West Covina
1444 West Garvey Avenue
West Covina, CA 91790

Dear Mr. Tice:

I am writing to respond to your letter of April 15, 1983, in which you submitted a series of questions designed to clarify information presented by the Department at a public meeting in West Covina on April 7. The purpose of that meeting was to discuss with the public a report entitled "Ambient Air Monitoring and Health Risk Assessment for Suspect Human Carcinogens around the BKK Landfill in West Covina", which the Department had prepared jointly with the South Coast Air Quality Management District and the State Air Resources Board.

The Department has prepared the following responses to the questions and concerns submitted by the City Council:

Question #1 "Errors in the use of base data were presented. Please examine the list of data errors and answer the following questions:

- o Was the information presented by the public correct?
- o If so, what is the health risk, based on the revised data?

If not, explain the reason(s) for the discrepancies and confirm the health risk assessment."

Response: The information presented at the public meeting by Mrs. Arneson related to errors in the way data was transferred to graphs contained in the report. We are aware of no errors in the printed numbers or in the risk estimates on which they were based.

The Department has reviewed the graphs of the means and ranges of the concentrations and agrees that there are indeed several errors, especially in the plotting of absolute ranges. These errors were the result of an attempt to manually transfer data from the voluminous computer printouts of the individual sample values. The graphs have since been redone by computer and double-checked for accuracy by our staff. Copies of the corrected graphs are attached as part of a response to questions submitted to the Department by the Coalition of West Covina Homeowner's Association.

The point to be made there is that the health risk assessment was based not on the graphs, but on mean concentrations provided

directly from the computer. The graphs were included in the report merely to help the reader visualize the wide range of concentrations observed. The health risk assessment is thus unaffected by the graphing errors. As stated in the report this assessment finds that at a maximum, the lifetime added risk of cancer from exposure to date to the air emissions monitored at BKK is 50/1,000,000. At this level we would not expect to find any additional cancer in the population residing adjacent to BKK.

Question #2 "The CDOHS staff said several times that there was an added health risk, but no health hazard. At this meeting, other CDOHS staff said that there was a health hazard. Specifically, in response to a question is there a health hazard, the response was affirmative. This added to the confusion over 'hazard' and 'risk'."

Response: The distinction between the words "hazard" and "risk" is subtle but useful. We regret that our presentation of them produced a misunderstanding.

Hazard is a quality. It is the ability of a substance to produce harm. If a substance can produce harm at a very low dose we say it is very hazardous. If doses far above any usual exposure are needed to produce harm the substance is considered non-hazardous substance. For example, forced ingestion of gallons of water can produce water intoxication, but water is a non-hazardous substance.

Risk is a quantity. It is the probability that a hazardous substance will indeed result in a specified health impairment at a specific exposure level over a specified time. For example, probability of death, or in other words, the "risk" of death for a one-minute exposure to air which contains 20% cyanide is 100%. The "risk" of death from a one-minute exposure to air which contains one part per trillion of cyanide is 0%.

In the context of BKK, there are substances in the air which are capable of producing cancer and which thus are hazardous. Considering the observed level and duration of exposure, our best estimate is that the risk conveyed by these hazardous substances is extremely low. These low levels of risk should however be lowered further by proper mitigation.

The Department is working with South Coast Air Quality Management District and the State Air Resources Board to implement the following mitigation measures:

1. Expand the gas collection system.
2. Implement a comprehensive routine leak detection program.

3. Direct all wastes containing volatiles to special handling.
4. Special handling to include subsurface discharge of liquids containing volatiles.

There is no particular reason to believe that emissions would be lower if the landfill were closed. Gas generation from the municipal waste will continue for years, and operating or not, BKK would still have to install and maintain an adequate gas collection system to minimize emissions.

Questions #3&4 (Both questions repeated points regarding sampling techniques and testing procedures raised by Dr. William Polich at the public meeting and in a series of questions submitted by the Coalition of West Covina Homeowners' Associations.)

Response: The majority of Dr. Polich's concerns were included in the list of questions from the community or raised at the meeting itself. A copy of those questions and our responses are attached for your information.

In conversation with Dr. Polich following the public meeting he also questioned the choice of substances monitored during the air emissions study. A variety of analyses of the landfill gas were reviewed to select the substances for monitoring. We chose all of the known or suspected carcinogens present in the landfill gas, for which there was a feasible analytic technique.

With respect to possible synergism, the Department is indeed concerned about potential synergistic action between carcinogens. However, there is presently no acceptable theory or method for estimating synergism among carcinogens. Thus the most health protective assumption that the Department could and did make at this time is that the risks from exposure to more than one carcinogen are additive.

Question #5 "On the one hand, CDOHS has expressed concern about the disposal of hazardous wastes in the vicinity of residential areas. On the other hand, CDOHS has been quoted to say that as long as the BKK Landfill is open, there is no need for another landfill in this century.

- o Why isn't the State interested in the establishment of another, remote landfill to substitute for the BKK Landfill?
- o When is the State going to eliminate their concerns about the landfill in West Covina by establishing or encouraging another remote site?"

Response: The State itself is not in the business of operating landfills. In California, Class I landfills are operated as businesses by the private sector. The State is concerned with assuring that landfills are operated in full compliance with all State and federal laws, as well as with the question of whether there is sufficient capacity in California to accommodate the volume of wastes generated by California industries.

With these concerns in mind, the State is participating with local agencies and interested members of the public in the Southern California Hazardous Waste Management Project. This project is an attempt to identify locations that might satisfy state and local requirements for an acceptable hazardous waste landfill as well as treatment facilities. The decision to purchase or lease land which would be operated as a Class I landfill is one that has yet to be made. That decision would be based on a number of factors, including the volumes of hazardous wastes generated in the area, the remaining capacity at existing landfills, and the economics of landfill disposal. Those economics are changing as the State has recently increased fees for landfill disposal of hazardous wastes, implemented bans on the disposal of highly toxic wastes, and is encouraging the development of alternative facilities that would recycle, treat or destroy wastes that heretofore have been sent to a Class I landfill. All of these factors combine to increase the costs of land disposal relative to waste treatment. We are already seeing a reduction in the overall volume of wastes that are sent to landfills in California, thus extending the lifetimes of those already in operation. This situation, combined with public opposition to the permitting of an additional landfills, makes it difficult to predict when or if Class I landfill will be permitted in Southern California in the foreseeable future.

While the State does have concerns about the BKK landfill, these concerns are being addressed through mitigation measures required by the Department and other state and local agencies. We have found nothing which indicates that the landfill presents such a significant risk to public health or the environment that the extreme action of shutting down the facility would be justified.

Question #6 "At this meeting, it was stated that the local jurisdiction (City) can control and eliminate the land use (landfill) if it is not compatible with the residential areas and/or vehicular traffic.

- o Please specify the State law that gives the local jurisdiction the authority to take this action.

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- o What steps have to be taken to complete this section?
- o Are there any other agencies that must be consulted or involved in the process or is it strictly a local matter?"

Response: It is doubtful that the City of West Covina could legally seek to regulate transportation of hazardous waste to BKK. Section 25149 of the Health and Safety Code specifically preempts local regulations that would affect the operation of Class I sites. This legislation was specifically intended by the legislature to preserve the operation of these sites in the overall public interest and to assure that they are operated responsibly under state supervision. Further, Section 25167.3 of our code specifically preempts local jurisdictions from adopting regulations or ordinances regarding the transportation of hazardous wastes, including inspections of hazardous waste vehicles, which conflict with State regulations. However, this section does not prohibit a local jurisdiction from developing programs to assist the Department or the California Highway Patrol in enforcing state regulations regarding the transportation of hazardous wastes.

Question #7 "West Covina--as is the case in most of Southern California--is affected from time to time by seismic activity.

- o What would be the resulting impact on the emissions from the landfill of an earthquake of a magnitude of 8.3 on the Richter scale on the San Andreas fault or the Duarte faults or the Whittier fault?
- o What can be done to prevent any impacts of such earthquakes? Can this be a requirement of local permits, State permits or any other permit required for the operation of this landfill?"

Response: The Duarte and Whittier faults are probably not capable of producing an earthquake of magnitude 8.3, but such a quake on the San Andreas fault could cause numerous ruptures of the landfill cover, and might result in increased emissions. Quakes of lesser magnitude on the Duarte or Whittier faults could possibly cause similar effects. Methods for controlling such possible emissions will be addressed in the contingency plan submitted by BKK as part of their RCRA Part B permit application.

Question #8 "The mixing of organic, solid wastes with toxic, hazardous wastes was mentioned. According to the emissions report, the decomposition gases from the solid wastes are the transporters of the toxic compounds in the air.

- o Can the City prohibit the comingling of these wastes?

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- o Can the State prohibit comingling? If so, when will this prohibition be enacted? When will it be implemented and by whom?"

Response: Section 25149 of the Health and Safety code specifically preempts local regulations which would affect the operation of a Class I site, including the mixture of hazardous and solid waste at a facility, unless the director of the Department of Health Services determines that the operation "may present an imminent and substantial endangerment to health and the environment." Having conducted a study of air emissions and a worst-case assessment of the health risk posed by emissions, the Department's conclusion is that the landfill emissions do not present "an imminent and substantial endangerment to health and the environment."

The State could prohibit the comingling of wastes at BKK. However, with respect to air emissions, the real issue is not comingling, but rather the practice of placing volatile organic liquid wastes in a landfill environment. The State is approaching a long term solution to this problem in two ways: through regulations recently adopted by the Department of Health Services, which require that many of these materials be banned from land disposal by January 1, 1985, if treatment alternatives are available; and through additional restrictions on the management of liquid volatiles currently being considered by the Air Resources Board.

The issue of comingling will be further examined during the RCRA Part B permit application process.

Question #9 "The State has proposed several mitigation measures to control emissions.

- o What will be the criteria to judge the effectiveness of these measures?
- o What will be the testing procedures used to evaluate the emissions monitoring?
- o How will the effectiveness of these measures be documented and reported to us?"

Response: The mitigation measures will be judged on their success in eliminating further exceedences of the vinyl chloride standard, as well as reducing the air levels of the other compounds. Additional air monitoring will be necessary to document the effectiveness of the mitigation measures. Air monitoring data will be public information, and will be made available to the City as it has been in the past.

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Question #10 "The State promised in 1982 that they will communicate regularly with the City and its residents.

- o How frequent and in what form will this communication be?
- o Will we be regularly informed on the progress of controlling emissions from the landfill? How?

Response: In the future, the Los Angeles Regional Office of the Department of Health Services will be responsible for communications with the residents and officials of West Covina. These communications will be provided on an as needed basis.

Copies of this letter are being distributed to the list of people who received a copy of your April 15, 1983 letter.

Thank you for this opportunity to respond more fully to your concerns.

Sincerely,



Richard P. Wilcoxon
Acting Deputy Director
Toxic Substances Control Division

Attachment

DEPARTMENT OF HEALTH SERVICES

714/744 P STREET
SACRAMENTO, CA 95814

June 1983



In question and answer format, the following comments constitute the formal response of the Department of Health Services to the written questions and comments submitted by the Coalition of West Covina Homeowners' Associations on the report, "Ambient Air Monitoring and Health Risk Assessment for Suspect Human Carcinogens Around the BKK Landfill in West Covina." This report was prepared by The Department of Health Services, The California Air Resources Board and The South Coast Air Quality Management District in March, 1983. A public meeting was held on 4/7/83 to discuss any questions or comments on the report.

Questions

1. How many chemicals dumped into BKK have you not tested for, thirty thousand, sixty thousand?
2. What is the effect of all the chemicals dumped in BKK on increased cancer risks and other health conditions of West Covina residents?
3. There are more than 200 compounds that have been identified as carcinogens, most of which, if not all, have been dumped at BKK. What would the risk be if all of these compounds had been measured and included in your analysis?

Responses

- 1-3. It is important to remember that although a material may be hazardous, it is not necessarily a health risk. There is a potential for adverse health risks only when this material can impact a human population. There must be a route for the material to get off-site in order for it to provide a health hazard. The report that the Department provided addresses one possible route of human contact, that of air emissions. Although many thousands of substances were dumped at BKK, in general only those that are volatile could potentially get into the atmosphere. As explained in the report, those carcinogenic substances identified in the gas collection system at high concentrations were monitored for off-site. The other carcinogens identified in the landfill gas were approximately 100 times lower in the gas collection system than those substances that were monitored. Based on the known toxicology of the other substances in the gas collection systems, the Department believes that their concentrations in the ambient air will be well below their toxicological thresholds for non-carcinogenic effects.

Question

4. What were the air concentration standards used in the risk analysis that correspond to an increased lifetime risk of 1 in a million?
 - a. How were these standards established?

- b. What criteria was used to establish them?
- c. If these standards are not as low or lower than the air concentration equivalent of the EPA water quality criteria, why aren't they?

Response

- 4. With the exception of vinyl chloride there are NO ambient air standards for those substances that the Department discussed in its report. The air equivalents that the ARB calculated from the EPA Water Quality Criteria are not standards, but only estimates of equivalent risk. The values that the Department used were similar to those derived by the ARB and differ at most by approximately 10%, and usually in the health protective direction.

Question

- 5. What were the concentrations of each of the chemicals used in the risk analysis? How were they extrapolated back in time to estimate the concentrations during improvements and prior to installation of the gas recovery system and other gas emission mitigation measures?

Response

- 5. The concentrations of each of the chemicals used in the risk analysis is the simple mean for the measured values of the two laboratories as shown in Table II of the report. The observed concentrations were extrapolated by proportionally increasing their values relative to the observed change in the concentration of vinyl chloride from 1981 to 1983. These values were increased approximately twofold from the values for 1983 to 1981.

Question

- 6. Why was only seven years used in the study when many people have lived near the dump since it started in 1963?

Response

- 6. It is the Department's understanding from the city's records that those housing developments immediately adjacent to the landfill were issued permits of occupancy only 7 years ago. These are the people most strongly impacted by the emissions. Since dilution with distance from a source is known to occur and air modeling (Gaussian) suggests that the concentration of a material in air decreases by approximately the square of the distance, those residents more distant from the site would be under a significantly lower risk than those immediately adjacent to the site. For example, under moderately stagnant air conditions (D stability class) if the concentration of a substance at 100 feet from the perimeter of the site was 10 ppb, then the projected concentration at one mile downwind

will be approximately 0.007 ppb. The report, however, assumes that everyone within a one-mile radius of the site boundary is subjected to the same concentration as discussed in the following response.

Question

7. What fraction of the population was associated with each monitoring station?

Response

7. The concentrations for each substance for stations A and B were averaged and this average concentration applied to the population south of the site, or approximately 34% of the total population. Station D served as the basis for those populations west of the site or approximately 34% of the total population. The remaining residences, primarily north of the site were estimated using the concentrations from Station F.

Question

8. Was any allowance made in the risk analysis for synergistic effects between the various carcinogenic chemicals?

Response

8. There are NO methods to predict the interactions of different carcinogens. These interactions may be additive, synergistic, or antagonistic. Or one substance might promote the carcinogenic activity of another substance (potentiation). The most conservative method that the Department could employ for interactive effects, using accepted methods, is additivity.

Question

9. How can the Pico Rivera station, which is located in an industrialized area, be used as a control for West Covina which has no industry and the only source of toxic emissions is BKK?

Response

9. See attached memo from the South Coast AQMD dated April 13, 1983.

Question

10. The inability to measure air concentrations to sufficiently low levels (detection limits are considerably above values resulting in high cancer risk) and the use of a control measurement makes the risk analysis non-conservative. Air concentrations of carcinogens which, although harmful, do not exceed the detection limits are subtracted out of the analysis. This procedure completely eliminated consideration of chlorobenzene in

the analysis. Chlorobenzene was measured in the gas collection system at BKK and is a known carcinogen which gives an increased cancer risk at very low concentration levels.

Response

10. Since chlorobenzene was not detected (detection limit 10 ppb) during the study it was not included in the risk assessment. Furthermore, the Carcinogen Assessment Group of the U.S. Environmental Protection Agency which does risk assessment for the EPA, Occupational Safety and Health Administration (OSHA), Consumer Products Safety Commission (CPSC) and others, considers the available data inadequate for a carcinogenic risk assessment. There is, however, adequate data for the Department to consider chlorobenzene a suspect human carcinogen.

Question

11. What were the threshold values used for the estimation of toxic non-carcinogenic effects for the chemicals used in the risk analysis?

Response

11. Under the Occupational Safety and Health Act of 1970, the National Institute of Occupational Safety and Health (NIOSH) and the Occupational Safety and Health Administration (OSHA) are responsible for ensuring that every working man and woman is provided a safe and healthful working environment. In order to do this NIOSH and OSHA have set occupational air standards as the time-weighted average concentration for a normal 8-hour workday and a 40-hour workweek, to which nearly all workers may be repeatedly exposed, day after day, without adverse effect. To allow for a residential exposure (24 hours/day, 7-days/week) and for the fact that workers are generally the healthiest segment of the population, a ten-fold safety factor is generally used to establish a comparison level for a residential exposure. With two exceptions these concentrations are based on exposures that would not cause irritation or acute or chronic toxicity.

See Table 1 below for a list of applicable standards in comparison to observed air levels. These occupational standards themselves are well below any threshold for acute or chronic effects, and suggest that the observed ambient concentrations will not result in any non-carcinogenic adverse health effects. It should be stressed that the OSHA values are based on repeated continued exposure, thus the basis of comparison for ambient levels is most appropriately the mean concentration. The highest observed concentration, in parenthesis is included for comparison only.

TABLE 1

<u>Compound</u>	<u>OSHA Std.</u>	<u>Comparison Level Resident. Exp.</u>	<u>Maximum Observed Mean (high)</u>	<u>Safety Factor**</u>
Benzene	10 ppm	1 ppm	0.0048 (0.0086)	200
Chloroform	50 ppm	5 ppm	0.001 (0.0099)	5,000
Chlorobenzene	75 ppm	7.5 ppm	<.010 (<.010)	>750
Chloroethene (vinyl chloride)	*	5 ppm ⁽¹⁾	0.0073 (0.035)	680
Tetrachloro- ethene (Perc)	100 ppm	10 ppm	0.0037 (0.011)	2,700
Trichloro- ethene (TCE)	100 ppm	10 ppm	0.0018 (0.026)	5,600
1,1-Dichloro- ethene (vinylidene chloride)	*	1 ppm ⁽²⁾	0.0013 (0.0063)	770
1,2-dichloro- ethane (ethylene dichloride)	50 ppm	5 ppm	0.003 (0.0087)	1,700
Trans-1,2,- dichloro- ethene	200 ppm	20 ppm	<0.003 (<0.003)	>7,000

* - OSHA Standard Based on Carcinogenicity

** - Ratio of comparison level for residential exposure to actual maximum observed mean air levels.

(1) Based on Torkelson, T.R et al, Am. Ind. Hyg. Assoc. J. 22(5):354 (1961).

(2) Based on a suggested TLV of 10 ppm for non-carcinogenic effects, "Documentation of Threshold Limit Values", Fourth Edition, American Conference of Governmental Industrial Hygienists, 1980, 432-433.

Question

12. Where are the details of the risk analysis -- the data and formulas describing in detail how the risk was calculated?

Response

12. The risks were calculated using the assumptions listed in Table V of the report. These assumptions are very conservative in that each would result in the maximum possible exposure, corresponding risk and the population at risk.

Question

13. The following questions are directed to AQMD and ARB.
- a. How many compounds were measured during the expanded emissions study?
 - b. If you tested for any other chemicals other than those reported, what were they and what were their measured values?
 - c. If other compounds were tested for, why weren't they included in the risk analysis?

Response

- 13 a-c. No compounds other than the nine identified in the report were tested for on a systematic basis. Laboratory reports by the Department of Health Services' Air and Industrial Hygiene Laboratory referred to the finding of Freon 113 (1,1,2-trichloro-1,2,2-trifluoroethane), a member of the family of fluoro-carbons widely used as refrigerants, aerosols, propellents and solvents. This compound was not found in the landfill gas collection system and is not a suspect human carcinogen. Freon 113 was therefore not included in the risk analysis.

Question

14. The first evidence of carcinogenic compounds being emitted from BKK was documented in the Eutek report of January, 1981. Why did it take so long to undertake emission measurements and report on the findings?

Response

14. The first evidence suggesting a relationship between the presence of volatile carcinogens in the community to emissions from the BKK landfill was the finding of chloroform and benzene by USC in September, 1980. In May 1981, vinyl chloride in the ambient air in excess of the State

Ambient Air Quality Standard (10 ppb) was found. As a result of this finding, efforts were focused on controlling the input of vinyl chloride to the site and controlling emissions of vinyl chloride and other compounds which are present in the landfill gas. During the period between May 1981 and July 1982, vinyl chloride monitoring continued on a daily basis to detect any trends in ambient air levels which may have been attributed to the mitigation efforts. Vinyl chloride was used as an indicator for other compounds in the landfill gas during this period and other resources were focused on controlling the problem rather than sampling for other compounds.

Question

15. When is a complete gas emission analysis to measure all of the toxic materials being emitted from the BKK site going to be made?

Response

15. A "complete gas emission analysis" is interpreted to mean: 1) A quantitative assessment of the on-site sources of emissions, 2) An off-site ambient air sampling program similar to that described in the report except that all samples would be analyzed for all suspect carcinogens found in the landfill gas, and 3) A meteorological survey to identify dispersion patterns and dilution with distance from the landfill.

Each aspect of such a study would be very complex, costly and would probably fill volumes. The conclusions reached from such a multi-million dollar effort would not be substantially different than those given by the current report. This is for several reasons:

- a) Use was made of worse-case assumptions for the air concentrations. The use of more precise meteorological data would only decrease the estimated risk.
- b) Those other suspect carcinogens in the gas collection systems were approximately 100 times lower in concentrations than those that were monitored. This would not significantly increase the calculated risks.

Question

16. The detection limits listed in your report exceed the ARB air equivalent of the Environmental Protection Agency water criteria for cancer risks of greater than 1 in a million. How can you continue to dispose of chemicals in a residential area if they can't be measured to a safe level which is non-health threatening?

Response

16. The calculated concentration for most of the suspect human carcinogens corresponding to a 1-in-a-million lifetime excess risk are indeed below the detection limits for the current state-of-the-art methods. In using concentrations that would correspond to a one-in-a-million lifetime

excess risk the Department is attempting to be as health protective as possible. At such low levels the Department may use air modeling to ensure that these goals are met. Even in those cases where it is not practical to do air modeling, calculations from the observed concentrations, as done in this study, can indicate if there will be adverse health effects. Furthermore, this study focused on quantifying excess risk by subtracting the concentrations at the control station from concentrations at the stations around the site. The excess exposure calculated in this manner is a measurable difference and it is this difference which is used to determine whether the one-in-a-million excess risk goal is achieved.

The Department agrees that it is not appropriate to dispose of such chemicals to land and has taken steps to stop the land disposal of those halogenated organics by 1/1/85. A key aspect of this phase out is the availability of feasible alternative treatment technologies. The Department is optimistic that with continued encouragement for the development of these technologies, alternatives will be available by 1/1/85. Lacking such alternatives at present, an acceleration of the phase out will lead to severe problems related to illegal storage and disposal of hazardous wastes. This phase out must be implemented on a statewide basis in order to be effective. The health assessment performed to date does not warrant a selective acceleration of the phase out at BKK.

Question

17. Why has commingling of garbage and toxic wastes not been stopped. The garbage decomposes producing methane, carbon dioxide and other gaseous products which create a positive static pressure forcing gas through the soil to the surface. This is obvious from the analysis of the gases entering the burner of the gas collection system. It is doubtful that air pollution mitigation will ever be successful as long as the practice of commingling of garbage and toxics continues at BKK. When will this practice be stopped?

Response

17. The real issue with respect to air emissions is not commingling, rather it is the practice of placing volatile organic liquids in a landfill environment. As mentioned in the answer to question 16, the Department is taking steps to phase out such practices. The ARB is also considering additional restrictions on the management of liquid volatiles.

The reduction in vinyl chloride emissions over the last two years is one indication that the gas collection system is indeed controlling emissions and that the potential exists for reducing emissions even further. For this reason we have mandated an expansion of the system and implementation of a comprehensive leak detection program. It is important to keep in mind that stopping the disposal of volatiles or of hazardous wastes will not resolve the problem. As long as the landfill generates gas, the gas collection system will be necessary.

Question

18. What would be the costs of incinerating the toxics currently being deposited in the BKK dump?

Response

18. Currently, the available technology for incineration of hazardous waste can only address a fraction of the waste disposed of at BKK. The latest survey performed by the Department (Draft Report on Available Technology for Hazardous Waste Treatment and Disposal, September, 1982) indicates that liquid organic wastes are the most amenable to incineration. Highly toxic solid waste can be incinerated at ten times the cost. Prices quoted by hazardous waste management firms in 1981 dollars range from \$13/metric ton to \$791/metric ton. One of the primary hurdles in establishing an incinerator to handle organic wastes going to BKK are the air permits necessary to operate in the most critical air basin (South Coast Basin) in California.

Questions

19. The recent rains have shown a hazard exists with regard to run-off from the dump. Is there a plan to establish criteria for water contamination in the surface run-off from the BKK dump?
20. Are there plans to initiate a program to monitor water contamination in the surface run-off?
21. Have provisions been made to control the contaminated run-off from rainfall before the contaminated material is released on to the city streets?

Response

- 19- 21. Comments by the California Regional Water Quality Control Board, L.A. Region are attached. If there is any potential for adverse public health impact from surface run-off from the site, the Department will immediately take remedial action.
22. The Department has reviewed the graphs of the concentrations of carcinogens and agrees that there are indeed several errors, especially in the plotting of the absolute range of concentrations found in the ambient air. These graphs have been corrected and are attached.

It is important to place these graphs in perspective relative to the body of the report. They were added after initial reviews of the draft to aid the reader in visualizing the wide range of concentrations observed. This was the only purpose and use for including them in the report. The risk assessment was done using the mean concentrations presented in Table II. Therefore these errors in plotting do not effect the conclusions of the report.

With respect to the questions on the chloroform data, it is correct that the chloroform data from Lab 2 was very limited in comparison to Lab 1. This, however, does not change the observations that chloroform was not consistently higher around the landfill than at the control station.

Attachments

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

MEMORANDUM

DATE: April 13, 1983

TO: Edward Camarena, Director of Enforcement

FROM: William D. Holland, Director of Technical Services *WOH/han*

SUBJECT: Review of reported errors in joint BKK Report.

We have evaluated the data provided by you and we find that most of the suggested changes are correct. The computer printout for vinyl chloride for Lab 2 was missing from our copy of the Appendices. Comments on the errors and the suggested corrections follow.

1. Vinyl Chloride The suggested mean of 7.3 is correct.
2. Trichloroethylene All of the suggested changes are correct except for the last one. The average TCE is 0.8 not 0.9. Preliminary data was used by them instead of the final data.
3. Perchloroethylene All of the suggested changes are correct.
4. 1-2 Dichloroethene This should read 1-2 Dichloroethane. The other suggested changes are correct with the reservation that the 0.4 ppb figure for Lab 2, site C should read "not detected."
5. 1-1 Dichloroethene All of the suggested changes are correct except for the next-to-last. Lab 1, site E highest should be 0.24, not 2.4 as suggested.
6. Chloroform The suggested change in the evaluation of the relative concentrations of chloroform at the various stations misses the mark. All inter-station comparisons should be based on paired data and the Student's "t" test should be used to determine the significance of the difference of two means. Comparing stations A and C we find that with paired data the mean conc. for A=0.26 ppb, the mean conc. for C=0.47 ppb, and that $t=0.6$, so the difference between the two means is not significant. The same treatment for stations B and C give the mean conc. for B=0.45, the mean conc. for C=0.12 ppb; that $t=2.17$, and that the difference between the two is significant to the 97% confidence level. Station C and D comparisons give the mean conc. for C=0.61 ppb, the mean conc. for D=1.13 ppb; $t=0.75$, and the difference is not significant. Therefore the conclusion we can draw is that the concentration of chloroform is significantly higher at Station B than at Station C, but that Stations A and D do not differ significantly from Station C.

mr

cc: A. B. Moore
J. A. Wood

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
LOS ANGELES REGION

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LOS ANGELES, CALIFORNIA 90012 -4596
(213)620-4460



MAY 2 - 1983

State Department of Health Services
Hazardous Waste Management Section
744 "P" Street
Sacramento, CA 95814

ATTN: Mr. Howard Hatayama

RE: Coalition of West Covina Homeowner's Associations' Questions 19, 20 and 21
in News Release Document Dated April 2, 1983 (63-31)

Dear Mr. Hatayama:

Pursuant to your request, we provide the following response to the subject questions concerning rainwater runoff monitoring at BKK landfill.

This office raised these same questions back in 1981. A sampling program was established to test the runoff water during 1981 and 1982 rainfall seasons. Three landfill site stations (including Nogales drainage) and one control station was monitored and tested for pH, electrical conductivity, heavy metals and selective volatile organics.

Reviewing the data no significant pollution was observed to warrant the continuation of the testing program during the 1983 rainy season.

Nevertheless, BKK constructed additional impoundment basins over the native grounds of the landfill for the purpose of desilting and controlling the runoff. These runoff impoundment basins are reexcavated and reconditioned and made ready for the next rainstorm. Water from the ponds are used at the landfill for dust control purposes.

Just recently this Board staff tested the water in Barrier No. 1 and in a downgradient monitoring well. No toxics were detected in both water samples.

Data is available in our office for review.

Very truly yours,

A handwritten signature in cursive script that reads "Raymond M. Hertel".

RAYMOND M. HERTEL
Executive Officer

cc: City of West Covina

Figure II

Range and Mean for CHLOROETHENE (VINYL CHLORIDE)

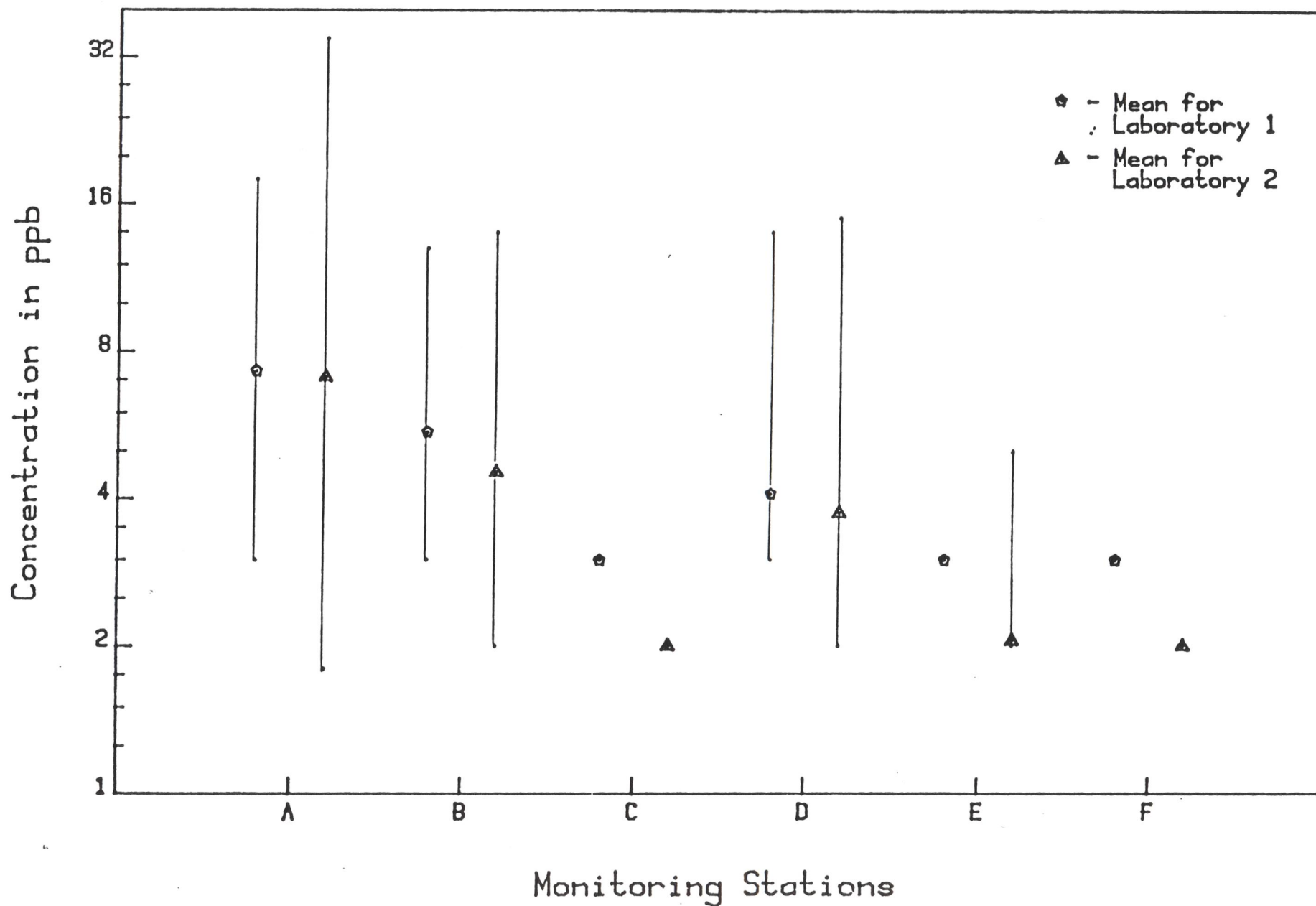


Figure III

Range and Mean for TRICHLOROETHYLENE (TCE)

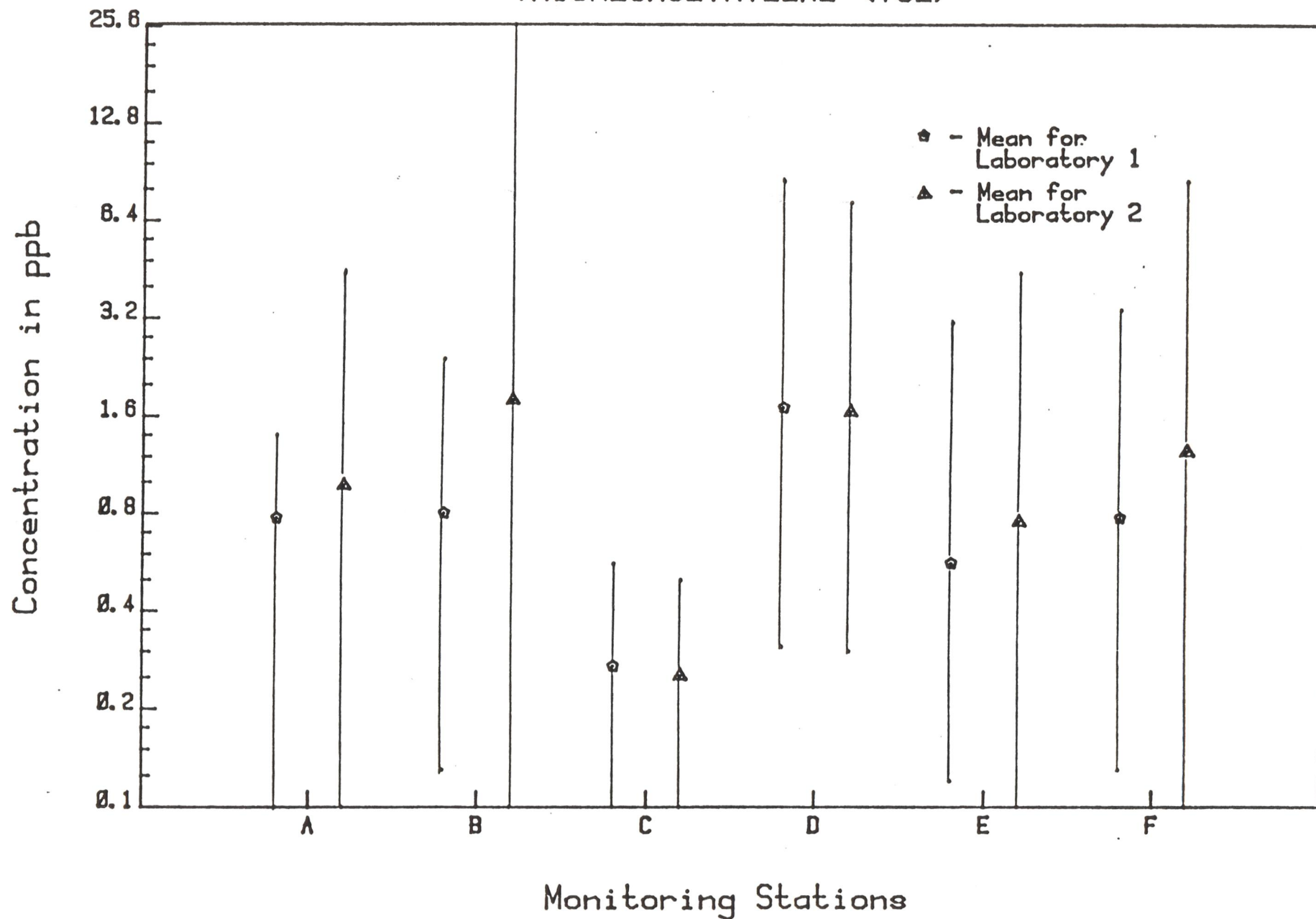


Figure IV

Range and Mean for TETRACHLOROETHENE (PERC)

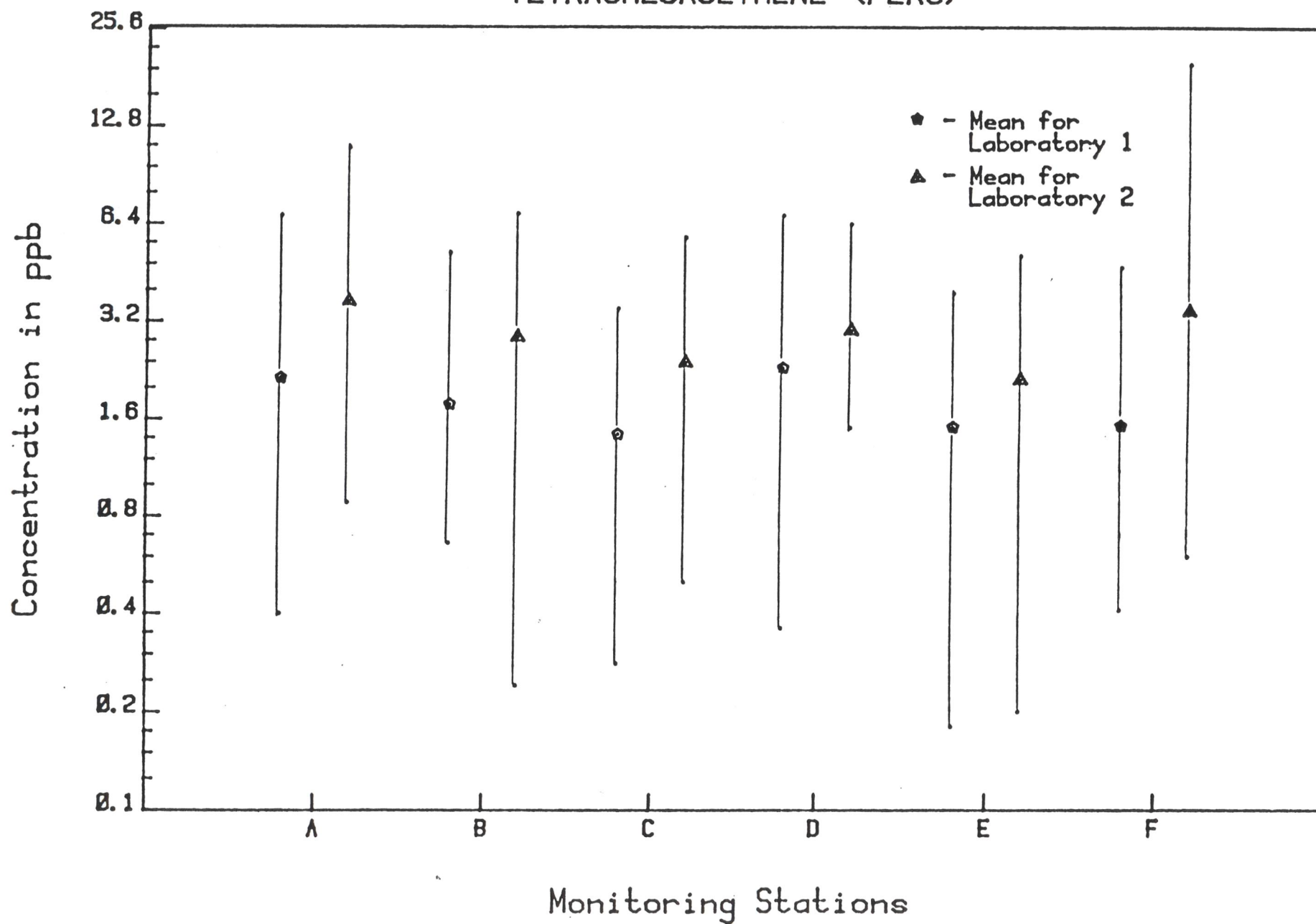


Figure V

Range and Mean for 1,2-DICHLOROETHANE (ETHYLENE DICHLORIDE)

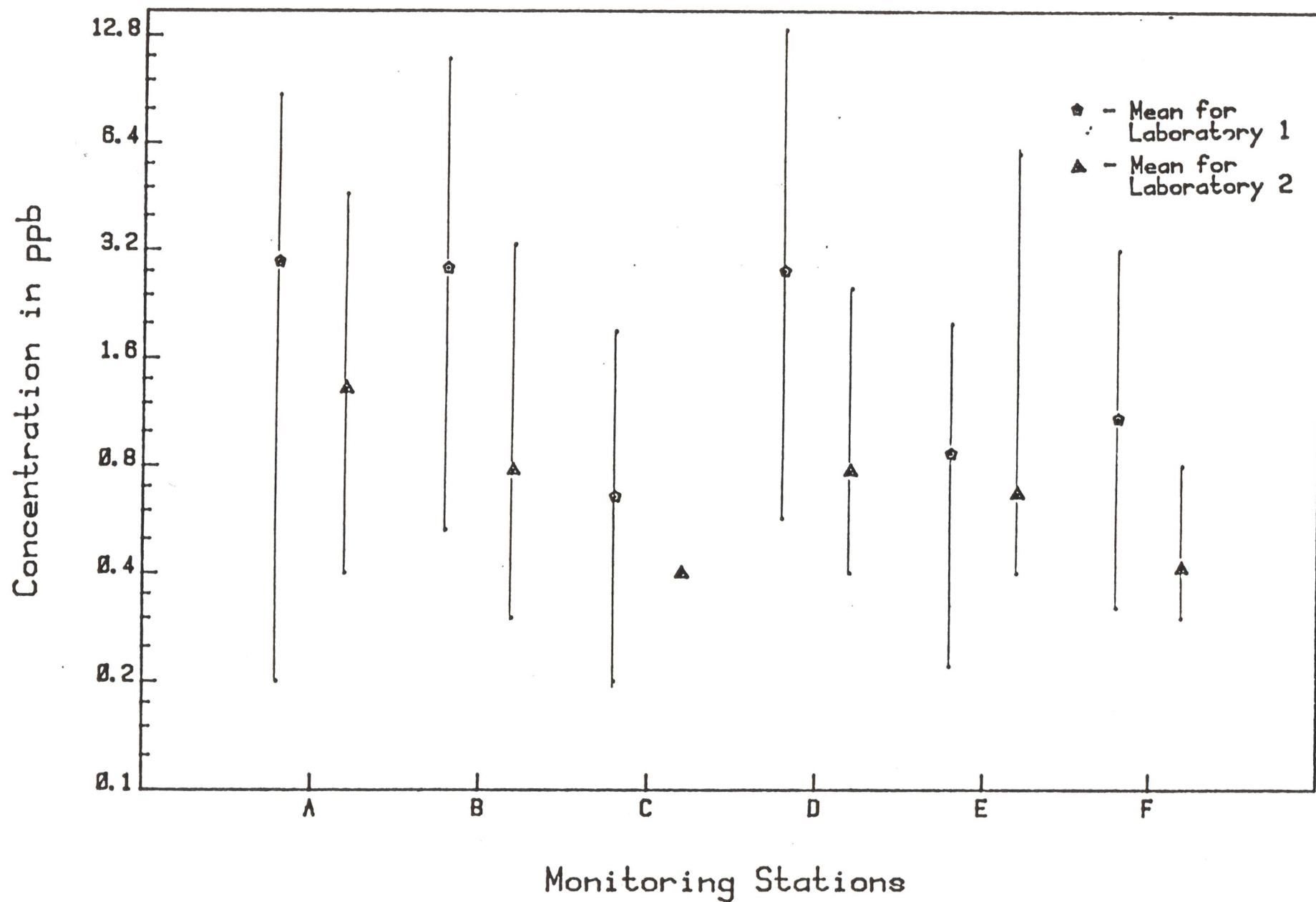


Figure VI

Range and Mean for 1,1-DICHLOROETHENE (VINYLIDENE CHLORIDE)

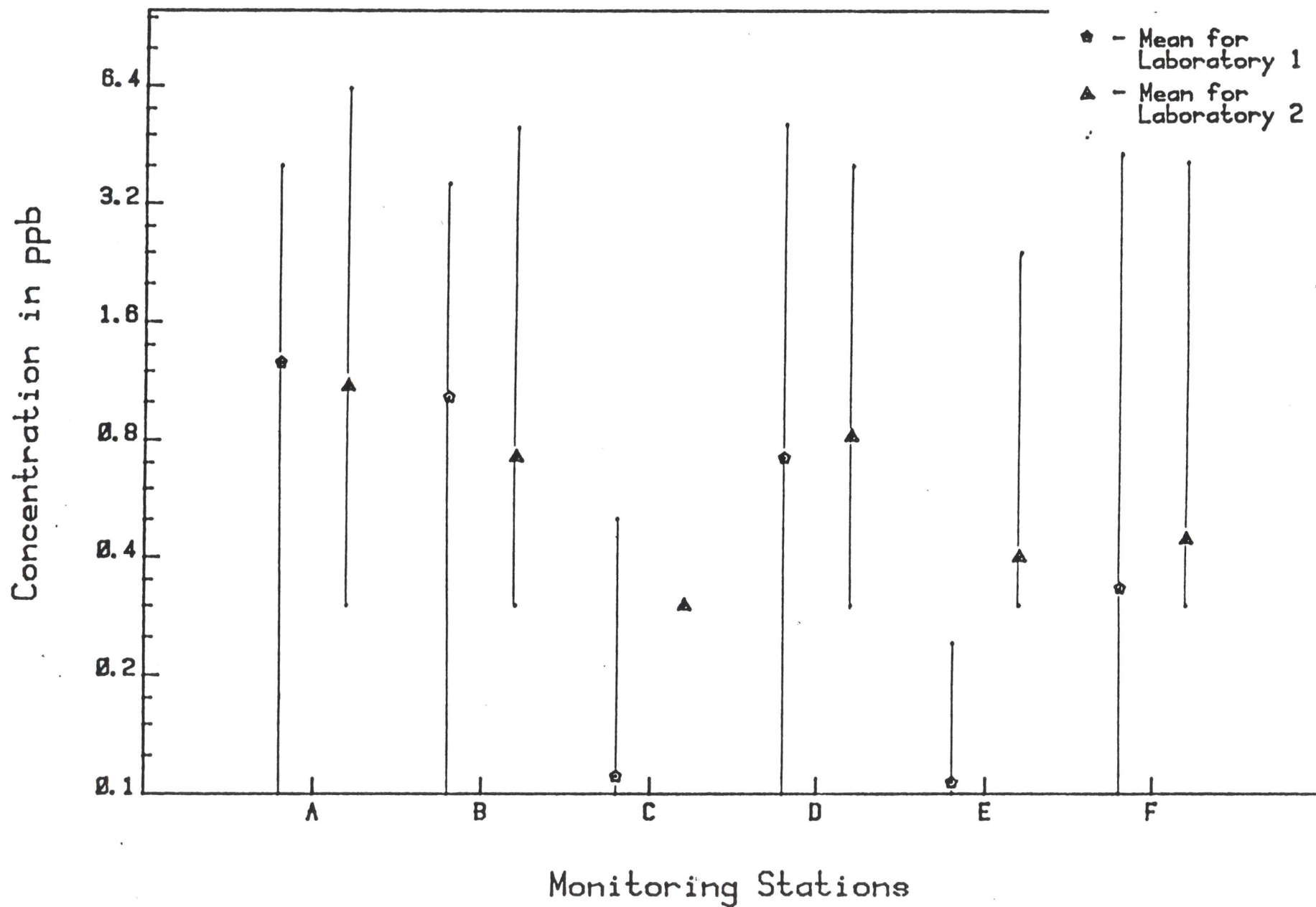


Figure VII

Range and Mean for TRICHLOROMETHANE (CHLOROFORM)

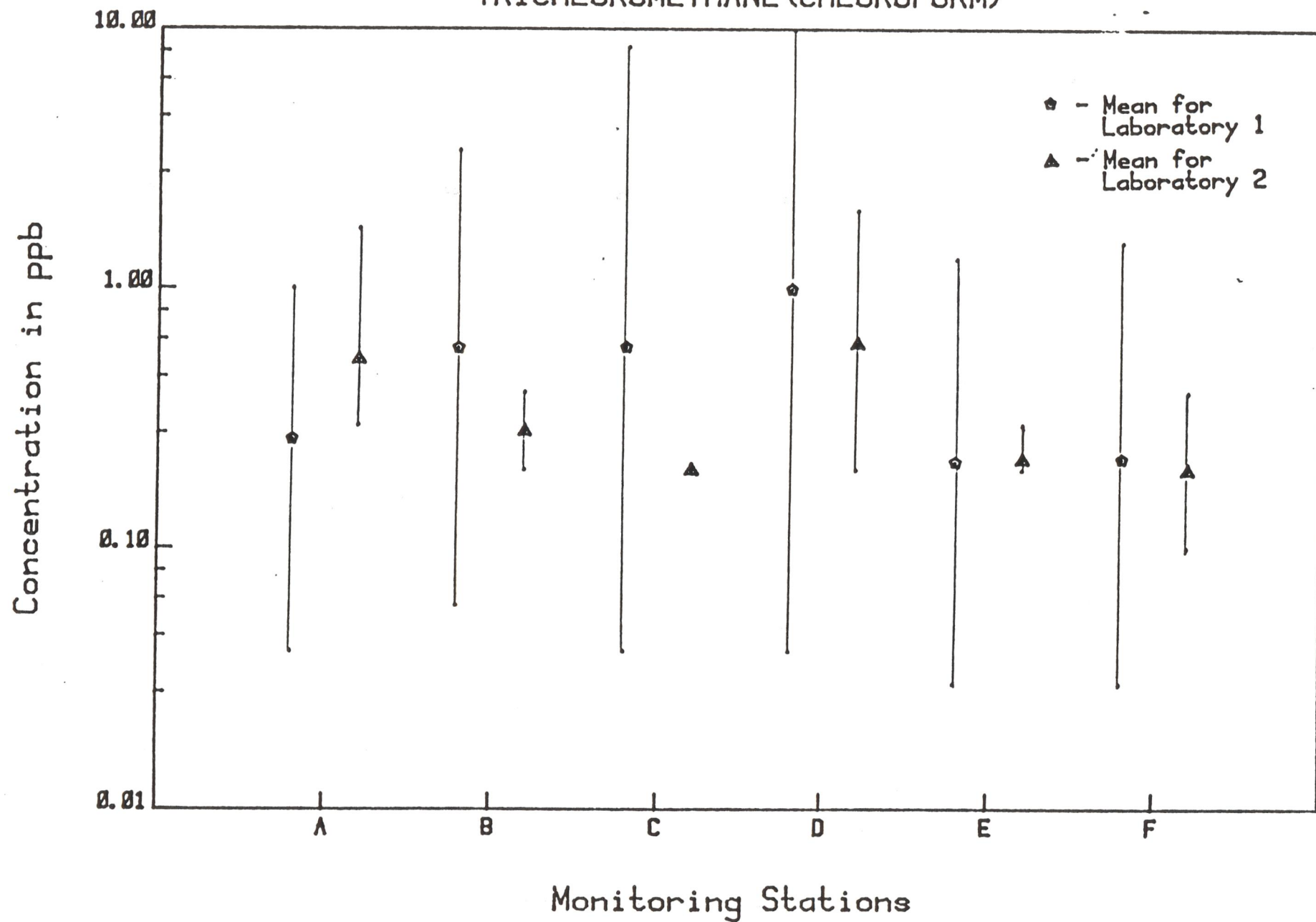


Figure VIII

Range and Mean for BENZENE

